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**EFFECTIVENESS OF CAREER AND TECHNOLOGY
STUDENT ORGANIZATIONS (CTSOs) IN TEXAS**

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Abstract

The purpose of this study was to determine the extent to which public school administrators believe that Career and Technology Student Organizations (CTSOs) are providing students the necessary skills for employability and academic success. Objectives focused on whether CTSOs are effective in developing students' leadership skills, keeping them engaged in school, developing technical skills, and improving academic achievement. School administrators were surveyed via the internet. A 28% response rate was achieved.

Ninety-two percent of respondents indicated that their school offered students the opportunity to participate in CTSO activities. Administrators indicated that the FFA was the CTSO that was either most effective or second most effective in teaching leadership skills, keeping students engaged in school, improving technical skills, and improving academic achievement. HOSA and Skills USA also were consistent in being among the top three CTOS that were effective in providing one of the four characteristics. Considering 80 percent as a benchmark, administrators perceived CTOS very favorably as being either mostly effective or very effective in meeting students' needs.

Introduction

Career and technical education (CTE) courses in public high schools create nearly one-fifth of all credits accumulated by students (Gray & Walters, 2001). CTE programs are offered in nearly all public high schools; there are more than 100,000 CTE teachers in the nation's middle and high schools serving over one million students. These courses offer most students their first experiences in the development of entry level work-based skills, yet CTE's role in the future of our nation and economy is subject to some debate.

Today, less than 20% of the workforce are in jobs classified as unskilled, while 60% of the jobs are classified as skilled occupations and 20% as professional (Texas Education Agency, 2006). Lynch (2000) stated that it is important to recognize the role of CTE in the new economy during any redirection of high school career and technical education; all students need an increasingly higher level of academics and, to know more and to be able to learn even more. Lynch went so far as to discuss the integral need of a "new" career and technical education as part of the reform of the American high school. Organizations face a looming specter of massive shortages in the skilled workforce pool, in part due to the impending retirement of large numbers of Baby Boomers (Wilkes & Bartley, 2007).

One of the main goals of No Child Left Behind is that all students receive a high school diploma, but the fact remains that some students will not reach this goal. According to the Department of Accountability and Data Quality in the Texas Education Agency (Texas Education Agency, 2005), the overall graduation rate increased from 79.5 percent for the class of 1999 to 84.6 percent for the class of 2004 for students in Texas.

The United States Department of Education (USDOE) has endorsed Career and Technology Student Organizations (CTSOs) as a critical component of an effective CTE program. The responsibility for CTE instructional programs and related activities, including CTSOs, rests with state and local education agencies. The USDOE allows states to use Federal Carl D. Perkins funds to provide leadership and support for the CTE student organizations (SEC 124).

The Texas Education Agency holds the state charters for CTSOs and has the responsibility for administrative leadership and fiscal management of each organization, as well as integration of CTSO activities into the appropriate CTE program. TEA sponsors the following CTSOs:

- BPA – Business Professionals of America (Business Education students);
- DECA – Distributive Education Clubs of America (Marketing Education students);
- FBLA – Future Business Leaders of America (Business Education students);
- FCCLA – Family, Career and Community Leaders of America (Family and Consumer Sciences Education students);
- FFA – National FFA Organization, formerly known as the Future Farmers of America (Agricultural Science and Technology Education students);
- HOSA – Health Occupations Students of America (Health Science Technology Education students);
- Skills USA (CTSO for Trade and Industrial Education students); and
- TSA – Technology Student Association (Technology Education students).

Purpose and Objectives

This paper is a small part of a much larger project designed to evaluate the effectiveness of Career and Technology Education in Texas. The focus of this paper and the purpose of this part of the research project were to determine the extent to which public school administrators perceive CTSOs to be providing students the necessary skills for employability and academic success. Many students in CTE programs are also a member of a respective CTSO. These CTSOs are an extension of the classroom and thus, skills developed through classroom, laboratory, and extracurricular activities enhance that student's ability to be an effective part of a workforce in a global economy.

The objectives of this portion of the study were to:

1. Describe public school administrators' level of agreement with CTSO student leadership development;
2. Describe public school administrators' perceptions regarding the effectiveness of CTSOs in keeping students engaged in school;
3. Describe public school administrators' perceptions regarding the effectiveness of CTSOs in improving students' technical skills; and
4. Describe public school administrators' perceptions regarding the effectiveness of CTSOs in improving students' academic achievement.

Methodology

This paper was developed as a small part of an evaluation of the Career and Technology Education programs in Texas and was funded by a grant through the Texas Education Agency. The components of the CTE evaluation to be completed in this project utilized existing achievement and performance data as well as electronic and written survey instruments and qualitative case study procedures to provide the desired information relative to the stated objectives. Accepted quantitative and qualitative collection and analysis methods were used (Patton, 1990; Key, 1991).

The population for this paper included stakeholders or administrators with direct management of all secondary and CTE programs in Texas. Stakeholders may have included, but were not limited to, CTE directors, superintendents, principals, assistant principals, and CTE teachers with administrative responsibilities for all CTE programs on a given campus. Multiple attempts were made to gather data from the entire population. Randomness was not a critical issue as there is typically no attempt to generalize the results of an evaluation study to other populations; however, some analytical generalizations can be drawn if other stakeholder groups are similar (Kelsey, 2004).

Survey Development

The survey instrument was developed to gather data from CTE program administrators. Survey items solicited responses about perceptions and attitudes as they related to the overall effectiveness of the CTE program in their schools.

The format of the survey items was both quantitative and qualitative in nature. Items requiring respondents to indicate a perceived level of agreement or satisfaction with an event or phenomenon used Likert-type scales. Survey items that asked whether or not a particular event, method, model, etc., was observed or used required a yes/no response with opportunity for open-ended comments.

Warwick and Lininger (1975) pointed out that there are two basic goals in survey design: (a) to obtain information relevant to the purposes of the study and (b) to collect this information with maximal reliability and validity.

Validity, including face, content, and construct validity, was determined by having a draft of the instrument reviewed by TEA staff and other educators. These reviewers constituted a panel of experts that ensured that the survey included a set of items that was representative of the constructs being measured. Face validity was determined by the panel of experts as well as through a pilot test of the instrument with educators not included in the study population, but similar in make up.

The survey instrument was divided into sections which fit logically with the objectives of the evaluation. Pilot test data was used to determine internal consistency coefficients, using Cronbach's alpha, for each section of the survey instrument. Alpha coefficients ranged from 0.72 to 0.94 for the various sections of the different survey instruments. High internal consistency coefficients provide a good estimate of the reliability of a set of survey items (Key, 1991).

Electronic Survey Administration

Following the evaluation of the draft survey instruments, items were loaded onto a Web page designed and maintained by the contractor. The Web site was secured and encrypted to maintain the confidentiality of respondents. Responses entered via the Web page were loaded and stored in a database operated and maintained by the contractor. Prior to release, the Web page was evaluated by the panel of experts from the TEA.

Upon final approval by the TEA in late May, 2006, the Web-based survey was activated. Letter and e-mail communications were sent to all CTE administrators and staff informing them of the survey and providing instructions for accessing the Web site and entering responses.

Response rates for the administrator surveys were 480 responses for a 28% response rate. The response rate was low due to the late approval and implementation of the survey from the TEA. Many schools had already dismissed for the summer by the time the surveys were approved and activated.

Data Analysis (Survey)

Initial analysis of survey responses included descriptive statistics regarding response frequency and distribution. While surveys were confidential, demographics including sex, ethnicity, age, years teaching experience, tenure at current school, preparation program type, etc., were gathered and response distribution trends between groups were analyzed using cross-tabs and chi-square procedures. The data collected through the surveys were nominal or ordinal in scale, and therefore, a conservative approach to data analysis including non-parametric methods was employed. However, Velleman and Wilkinson (1993) argue that Steven's typology of scale is too strict for real-world data. Bearing this in mind, level of agreement or satisfaction scales (i.e., Likert-type) were treated as interval data for certain analyses.

Survey response distributions were also analyzed using past and present accountability ratings as groupings between which to measure trends. Relationships between survey results and student achievement as well as school ratings were examined by using crosstabs and other distribution measurement analyses.

Results/Findings

The majority of administrators who responded to the survey indicated that their school did not use any Perkins funds for support of CTSO activities, with only 46 percent stating that they did use some Perkins funds for this purpose. It should be noted, however, that 92 percent of those responding to the administrator survey said that their school did offer students the opportunity to participate in CTSO activities.

Administrators were asked to rate their perception of the effectiveness of CTSOs on four student development and education issues. Possible responses were: Not applicable, not effective, mostly ineffective, neutral, mostly effective, and very effective. Tables 1, 2, 3, and 4 show these responses.

Table 1
Distribution of Administrators’ Responses Regarding CTSO Help in Developing Student Leadership Skills

	Not Effective		Mostly Ineffective		Neutral		Mostly Effective		Very Effective	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
BPA ^a	3	2.7	5	4.5	16	14.4	31	27.9	56	50.5
DECA ^b	2	1.8	1	0.9	18	16.2	28	25.2	62	55.9
FBLA ^c	5	7.2	2	2.9	16	23.2	17	24.6	29	42.0
FCCLA ^d	4	2.2	4	2.2	29	16.3	52	29.2	89	50.0
FFA ^e	2	0.9	3	1.4	10	4.7	38	18.0	158	74.9
HOSA ^f	3	2.8	0	0.0	14	12.8	17	15.6	75	68.6
Skills USA ^g	2	1.7	4	3.4	14	11.9	19	16.1	79	66.9
TSA ^h	2	2.9	2	2.9	15	21.7	25	36.2	25	36.2

Note: ^a n=111; ^b n=111; ^c n=69; ^d n=178; ^e n=211; ^f n=109; ^g n=118; ^h n=69

Table 1 reveals that administrators perceived the FFA to be the CTSO that was most effective in helping students develop leadership skills as over 93 percent of the respondents indicated the FFA to be either “mostly effective” or “very effective” in this area. Nearly three-fourths (74.9%) of responding administrators perceived the FFA to be “very effective”. HOSA (68.6%) and Skills USA (66.9%) also received a high number of responses from administrators who perceived them to be “very effective”. It should be noted that “not applicable” was a possible response for administrators who did not have that corresponding CTSO in their school district, and these frequencies were omitted in determining percentages.

Table 2

Distribution of Administrators' Responses Regarding CTSO Effectiveness in Keeping Students Engaged in School

	Not		Mostly		Neutral		Mostly		Very	
	Effective		Ineffective		Neutral		Effective		Effective	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
BPA ^a	3	2.8	3	2.8	14	13.1	34	31.8	53	49.5
DECA ^b	1	0.9	2	1.8	12	10.8	30	27.0	66	59.5
FBLA ^c	3	4.3	2	2.9	14	20.3	21	30.4	29	42.0
FCCLA ^d	4	2.3	4	2.3	23	13.1	53	30.1	92	52.3
FFA ^e	0	0.0	1	0.5	11	5.2	34	16.2	164	78.1
HOSA ^f	1	0.9	0	0.0	14	13.0	23	21.3	70	64.8
Skills USA ^g	1	0.8	3	2.5	12	10.0	21	17.5	83	69.2
TSA ^h	2	2.9	1	1.4	14	20.3	20	29.0	32	46.4

Note: ^a n=107; ^b n=111; ^c n=69; ^d n=176; ^e n=210; ^f n=108; ^g n=120; ^h n=69

Administrators were asked to indicate the degree to which CTSO are effective in keeping students engaged in school, and these results are detailed in Table 2. The FFA ranked highest according to administrators' perceptions as the organization that achieved the greatest level of effectiveness for this element of success. Almost 95 percent (94.3%) of administrators perceived the FFA to be either "mostly effective" or "very effective" in keeping students engaged in school. Skills USA (69.2%) and HOSA (64.8%) both achieved greater than a 60% response rate for being "very effective". All CTSOs were perceived to be either "mostly effective" or "very effective" by over 70% of the respondents. Again, the response of "not applicable" was excluded in these calculations.

Table 3

Distribution of Administrators' Responses Regarding CTSO Effectiveness in Improving Students' Technical Skills

	Not		Mostly		Neutral		Mostly		Very	
	Effective		Ineffective		Neutral		Effective		Effective	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
BPA ^a	2	1.9	1	0.9	15	14.0	26	24.3	63	58.9
DECA ^b	1	0.9	1	0.9	9	8.3	40	36.7	58	53.2
FBLA ^c	3	4.5	1	1.5	11	16.7	18	27.3	33	47.8
FCCLA ^d	4	2.3	1	0.6	36	20.6	62	35.4	72	41.1
FFA ^e	0	0.0	3	1.4	20	9.7	56	27.1	128	61.8
HOSA ^f	0	0.0	0	0.0	15	12.8	21	17.9	70	59.8
Skills USA ^g	0	0.0	1	0.8	10	8.5	19	16.2	87	74.4
TSA ^h	1	1.5	1	1.5	15	22.1	16	23.5	35	51.5

Note: ^a n=107; ^b n=109; ^c n=66; ^d n=175; ^e n=207; ^f n=106; ^g n=117; ^h n=68

The improvement of students’ technical skills is naturally a focus of curricular activities in the classroom and laboratory, yet these skills are frequently applied in extracurricular settings provided by CTSOs. Administrators were asked to indicate the level at which they perceive CTSOs to be effective in improving these skills, and Skills USA (74.4%) was most often perceived to be very effective. Additionally, over 90 percent (90.6%) of administrators provided a response of “mostly effective” or “very effective” for this organization. Following Skills USA, the FFA (61.8%), HOSA (59.8%), and BPA (58.9%) were the CTSOs that were most frequently perceived to be “very effective” in improving technical skills. DECA (89.9%) and the FFA (88.9%) also received a high percentage of responses that were either “mostly effective” or “very effective”. “Not applicable” was omitted in determining percentages if the school did not include a respective CTSO in its student organization options.

Table 4
Distribution of Administrators’ Responses Regarding CTSO Effectiveness in Improving Students’ Academic Achievement

	Not Effective		Mostly Ineffective		Neutral		Mostly Effective		Very Effective	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
BPA ^a	2	1.9	3	2.8	16	15.0	33	30.8	53	49.5
DECA ^b	1	0.9	1	0.9	15	13.6	42	38.2	51	46.4
FBLA ^c	3	4.3	1	1.4	15	21.4	23	32.9	28	40.0
FCCLA ^d	3	1.7	3	1.7	37	20.9	61	34.5	73	41.2
FFA ^e	0	0.0	3	1.4	20	9.5	71	33.8	116	55.2
HOSA ^f	1	0.9	0	0.0	15	14.0	28	26.2	63	58.9
Skills USA ^g	1	0.8	2	1.7	18	15.0	37	30.8	62	51.7
TSA ^h	1	1.4	2	2.9	15	21.4	22	31.4	30	42.9

Note: ^a n=107; ^b n=110; ^c n=70; ^d n=177; ^e n=210; ^f n=107; ^g n=120; ^h n=70

Career and technical education is often perceived to help students make a personal connection to, and see relevancy in, academic skills gained in core academic areas. CTSOs can further enhance this learning through various activities, and naturally, also enhance what is learned in the career and technical education classroom. Administrators were asked to indicate the level to which they perceive an improvement in students’ academic achievement occurring through CTSOs. HOSA (58.9%) was the CTSO that was most frequently perceived to be very effective in improving students’ academic achievement. The FFA (55.2%) and Skills USA (51.7%) were the second and third, respectively, ranked CTSOs in terms of receiving a “very effective” response. Additionally, the FFA (89%) was ranked highest in terms of receiving a response of either “mostly effective” or “very effective”, as HOSA (85.1%) and DECA (84.6%) achieved the next highest percentages of responses of either “mostly effective” or “very effective”. Responses of “not applicable” were not used to determine these percentages.

The data showed that, in all four dimensions or characteristics, those administrators indicating that their school had an FFA chapter felt that that particular CTSO was either most effective or second most effective in teaching leadership skills,

keeping students engaged in school, improving technical skills, and improving academic achievement. HOSA and Skills USA also were consistent in being among the top three CTSOs that were effective in providing one of the four characteristics. Considering 80 percent as a benchmark, administrators perceive CTSOs very favorably as being either mostly effective or very effective in meeting students' needs.

Conclusions

Realizing that the skill level of our society's future workforce is very dependent on secondary schools, CTSOs have a very prominent role in students' acquisition and honing of workforce skills. Such skills may in part be of a technical nature, but they also include "soft skills" that enable one to be deemed a successful worker. These soft skills – dependability, teamwork, honesty, trustworthiness, initiative, etc. – are applied in many facets of CTSOs.

Initial conclusions reveal some very positive attributes of CTSOs as well as some trends that are concerning and worthy of further investigation. As a whole, administrators perceived Career and Technology Student Organizations (CTSOs) to be either mostly effective or very effective in providing the characteristics of this portion of the study.

Regarding CTSOs helping students develop leadership skills, the student organization for agricultural science and technology students (FFA) was perceived by administrators to be most effective. Almost 93 percent (92.9%) of administrators indicated this organization to be either "very effective" (74.9%) or "mostly effective" (18.0%). Both HOSA (84.2%) and Skills USA (83%) were considered to be "very effective" or "mostly effective" by over four-fifths of responding administrators whose school district or campus included these CTSOs as an option.

Another question centered on how effective CTSOs are in regard to keeping students engaged in school. Again, the FFA (78.1%) was most frequently perceived by administrators to be very effective in accomplishing this task, and when combined with the response of "mostly effective", almost 95 percent (94.3%) of administrators considered this CTSO to have a high degree of success. While no other CTSO achieved greater than a 90 percent approval in terms of being either "mostly effective" or "very effective", all CTSOs received a combined approval rating in excess of 70 percent. It is noteworthy that more than 80 percent of administrators perceived Skills USA (86.7%), HOSA (86.1%), and BPA (80.3%) to be either "very effective" or "mostly effective".

Technical skill acquisition and improvement are often accomplished through participation in CTSO activities. Administrators most frequently perceived Skills USA (74.4%) to be very effective in this regard, and over 90 percent (90.6%) of administrators perceived the organization to be either "very effective" or "mostly effective". While administrators' perceptions of FFA (61.8%), HOSA (59.8%), and BPA (58.9%) being very effective lagged that of Skills USA, DECA (89.9%) and the FFA (88.9%) were very close to Skills USA in terms of receiving either a "very effective" or "mostly effective" rating.

The final component asked administrators to indicate their perceived effectiveness of CTSO in improving students' academic achievement. HOSA (58.9%) was perceived to be very effective by the highest percentage of administrators, as the FFA (55.2%) and Skills USA (51.7%) also received greater than a 50% response for this highest level of effectiveness. More than 80 percent of administrators, when considering a rating of

either “very effective” or “mostly effective”, perceived the FFA (89%), HOSA (85.1%), DECA (84.6%), and Skills USA (82.5%) as being effective in improving students’ academic achievement.

Recommendations

Given that less than one-half (46%) of administrators indicated that they use federal funds from the Carl Perkins Vocational and Technical Education Act in support of CTSO activities, it is recommended that administrators give more study to understanding the available use of these funds. While the study did not examine the extent to which these funds are used and why, the authors question whether administrators are thoroughly versed in the lawful uses of these funds.

Strong caution may be necessary in generalizing some of these findings due to them being simple perceptions. It is possible that administrators simply perceive a certain level of effectiveness based on the notoriety of a given CTSO. However, given the results obtained through this study, administrators should provide more support for those organizations that were constantly perceived to be either “mostly effective” or “very effective”. Subsequently, collaborative efforts among teachers/advisors of all CTSOs at a given school should concur to maximize student achievement from the experience. One such method is for non-FFA CTSOs to review and adopt curriculum materials used by the FFA to help students develop leadership skills.

CTSOs should also examine the specific elements of the FFA that makes it an effective organization in terms of keeping students engaged in school. Similarly, CTSOs other than Skills USA should focus on those characteristics of Skills USA that are so effective in improving students’ technical skills. Specifically, FBLA, BPA, FCCLA, DECA and TSA should collaborate with other CTSOs to strengthen their ability to develop students’ leadership skills, keep students engaged in schools, improve students’ technical skills, and improve students’ academic achievement. While these four organizations may do an admirable job in these areas, they consistently ranked behind the FFA, HOSA, Skills USA in the four areas studied.

Teachers and administrators must work with business and industry personnel to identify employability characteristics that are needed by the 21st century worker. Furthermore, many CTSO students will continue their education beyond high school. It is essential that those involved in coordinating and administering CTSO activities be cognizant of higher education requirements and the skills necessary to be successful at an institution of higher education.

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